Chapter 3: Pacific Coastal Salmon Recovery Fund Performance

The strategic goal of PCSRF is to contribute to the restoration, conservation, and sustainability of Pacific salmon populations and their habitats. Understanding the progress toward this overall goal is essential for ensuring wise investments of resources to accomplish specific outcomes. In response to the OMB Program Assessment Rating Tool (PART) assessment[3] and congressional direction, NMFS and the PCSRF grantees (states and tribes) have been working together since 2003 to develop performance measures and indicators to track progress and improve the collection and reporting of data on program outcomes.

Developing appropriate performance goals and indicators for PCSRF has been a challenge. The interrelated nature of salmon recovery requirements—including the multiple factors that limit self-sustaining populations, the complex and varied life-cycles of salmon, and the lack of information about many populations—makes it difficult to develop performance goals and indicators that match the PART model based on fiscal years. Despite these constraints, NMFS has made an aggressive effort to develop and implement project-level reporting aligned with an initial set of performance indicators in a very short time. As a result of this effort, data are becoming available for measuring progress toward specific PCSRF performance goals. Whereas past reports only reported the number of projects funded to improve habitat, new performance indicators are providing some assessment of progress toward salmon sustainability, as well as progress in specific areas (e.g., improved habitat and fish passage due to stream miles treated and the number of culverts replaced or repaired).

In reviewing the information provided in this chapter, it is important to note that many funded projects span multiple years and not all are complete. The numbers reported in the following tables represent an indication of cumulative progress in projects funded from FY 2000–2004. This chapter examines current knowledge of PCSRF projects from FY 2000–2004 across the Pacific Coast region to report on the progress toward the performance goals.

Progress Toward Performance Goals

Exhibit 3-1 summarizes the goals and measures and the indicators of progress in addressing the performance goals. Watershed assessments and plans will be used to refine the targets over time. Although not all projects have been completed and some are not able to report progress, the statistics presented below report on those that are complete and some that are underway.

Research is ongoing to determine sustainability based on the viability of salmon populations. Viability is a function of the number of salmon, and their productivity, distribution, and genetic diversity. The research to determine viability and recovery for sustainable populations requires in-depth analysis of historical distributions of salmon populations and assessment of the effects of natural and human-induced conditions.

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[3] The lack of a performance measurement system for PCSRF was first noted in the "Performance and Management Assessments" section of the "Budget of the United States Government Fiscal Year 2004." A "Program Assessment Rating Tool" (PART) was applied to the PCSRF by the Office of Management and Budget (OMB), resulting in a rating of "results not demonstrated." The basis for the rating was: (1) program-wide performance measures had not yet been developed, although each state was developing performance measures related to its individual needs; (2) the program had not been able to allocate funds based on recovery needs of specific salmon populations; and, (3) the long-term goal of the program is to contribute to recovery and conservation of Pacific salmon, and the program, which started in 2000, had not finalized annual measures yet. The PCSRF program implemented a data system for the collection of performance indicators in early 2003 setting the stage for development of performance measures and a system for reporting progress on those measures.

Exhibit 3-1: Progress in Performance Goals

Performance Goal	Performance Measure	Cumulative Indicator (FY 2000–FY 2004)
Increase naturally spawning Pacific salmon populations to levels that are sustainable and allow for annual harvests	Increase populations of ESA-listed Pacific salmon ESUs	**Increased fish populations over a 5-year period in 16 out of the 20 ESUs** with trend data within the past 10 years (See ESU graphs in Chapter 2)
Enhance the availability of habitat to support sustainable Pacific salmon populations	Increase amount of spawning and rearing habitat (including adjacent upland, wetland, estuarine, riparian, and instream habitat)	*Habitat Restored* » **Upland: 142,064** acres » **Wetland: 1,908** acres being created, **7,349** acres in treatment » **Estuarine: 2,370** acres being created, **53,593** acres in treatment » **Riparian: 1,355** miles » **Instream: 637** miles *Habitat Protected* » **51,520** acres acquired or protected » **212** miles of stream bank acquired or protected
	Improve habitat accessibility to support sustainable salmon populations	» **3,566** blockage removals » **1,520** stream miles being opened » **527** fish screen installations
Improve knowledge and management practices to sustain salmon populations	Increase understanding of viability and factors limiting recovery	» **26 ESUs (all)** have identified factors limiting recovery » **204 assessments** conducted
	Increase number of watersheds where effectiveness, validation, and/or status monitoring is occurring	**9,941** miles of streams monitored
	Improve harvest strategies that ensure sustainable salmon populations	**148,908,317** fish marked for management strategies

Of the 20 ESUs with trend data within the past 10 years, 16 are showing increases in salmon abundance over the past five years (see Chapter 2 for supporting data). Two are stable, and two with very small numbers of fish are declining. Complete data are not available for six ESUs. Salmon populations fluctuate widely, and for many ESUs it is difficult to draw conclusions from the limited data available. Development of accurate estimates of returning salmon requires the collection of data over many watersheds within an ESU over many years to account for natural variations.

There is variability across ESUs in the percentage of returns that are wild salmon versus hatchery salmon. Hatchery fish can contribute to salmon recovery by providing enough fish to support harvest and meet tribal treaty fishing rights. They also can provide the last level of protection against extinction. Recent hatchery reforms are helping to address some of the negative aspects of hatchery-bred fish, such as competition and loss of genetic diversity.

In the habitat realm, there is significant activity in estuarine habitat creation and treatment, with nearly 56,000 acres treated, created, or in the process of treatment/creation. This is essential habitat for an important and vulnerable stage in the salmon lifecycle. Additionally, riparian habitat found along rivers, streams, and creeks protects riverbanks, provides erosion control, and protects water quality. More than 1,350 miles of riparian habitat are either restored or in the process of restoration. These restoration efforts are being supplemented with improved forestry practices in most of the PCSRF states.

Removal of barriers has been a critical component in improving access to spawning and rearing habitat. PCSRF projects to remove passage barriers, as well as projects to replace ineffective culverts, are allowing fish to access habitat that has been unavailable for many years. More than 1,500 stream miles have been or are in the process of being made accessible to fish.

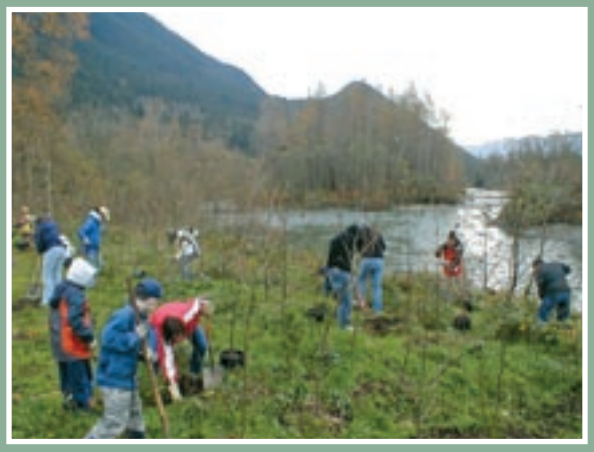
Watershed assessments improve understanding of the factors limiting salmon recovery. The data from these assessments contribute to site-specific knowledge of conditions such as limited access to habitat, water flow issues, harmful temperature regimes, and lack of suitable habitat. Although this provides the basis for recovery plans and appropriate recovery actions, more assessments are needed for a complete region-wide picture of habitat.

The performance goals listed above show progress in our ability to quantify the results of investments in salmon recovery. The factors causing the decline of salmon have been identified, and in many cases the current factors limiting recovery are better understood. PCSRF projects are not only supporting assessment efforts to identify the factors, but are moving toward focusing specific activities to address the limiting factors (see recovery domain information in Chapter 2).

Examples of the Type and Numbers of Region-wide PCSRF Projects* (FY 2000 to FY 2004)

- 1,125 planning and assessment projects identifying limiting factors in critical watersheds
- 1,847 habitat projects performing watershed treatment and restoration
- 564 fish passage projects opening upstream habitat through blockage removal and culvert upgrade
- 648 instream habitat projects restoring deteriorated stream conditions
- 562 riparian habitat projects repairing degraded stream banks critical to salmon spawning and rearing
- 437 upland habitat projects restoring water quality and quantity to watersheds downstream
- 74 wetland and 63 estuarine projects restoring essential habitat needed for salmon migration
- 154 land acquisition projects protecting key salmon habitat
- 619 research, monitoring, and evaluation projects used for planning and assessment
- 278 outreach and education events informing the public about the condition of Pacific salmon and the need for conservation

** The cumulative results of these projects are the numbers reported as "indicators" in Exhibit 3-1.*



45 volunteers planted 333 trees along the Middle Fork Snoqualmie River in May, 2005

Next Steps

PCSRF will continually examine the identified reporting metrics and performance indicators to improve the ability to measure outcomes as the program evolves. Research, monitoring, and evaluation (RM&E) programs are now beginning to develop the needed correlations between PCSRF activities and salmon returns. Measuring program performance is an iterative process and, over time, knowledge gained from the variety of indicators will contribute to a cumulative understanding of outcomes and program effectiveness. With the PCSRF performance measurement system now in place, the program can begin to report on projects annually or cumulatively to Congress, OMB (for PART), and other interested parties, although annual project reporting is a complex issue. Because of the various state and tribal commission funding and implementation time frames (see Chapter 4), not all projects can be characterized in the same year. Nevertheless, efforts to improve reporting and measuring progress in recovering salmon will continue and indicators will be refined over time.